

**CALIFORNIA INVESTOR OWNED UTILITIES
2010-2012 ENERGY EFFICIENCY PORTFOLIO
PROGRAM IMPLEMENTATION PLAN
STATEWIDE PROGRAM
PRESCRIPTIVE WHOLE HOUSE RETROFIT PROGRAM**

DRAFT

JANUARY 5, 2010

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Residential: Prescriptive Whole House Retrofit Program (PWHRP)

1. Program Name

Prescriptive Whole House Retrofit Program (PWHRP)

Program ID

***-SW-001h

Program Type

Core Sub-Program

2. Projected Program Budget Table

Table 1

3. Projected Program Gross Impacts Table – by calendar year

Table 1

4. Program Description

a) Describe program

The whole house program is a new addition to the 2010-2012 residential energy efficiency portfolio. The whole house program is comprised of two sub-programs - the Prescriptive Whole House Retrofit Program (PWHRP) and the Whole House Performance Program (WHPP) - that will be presented to customers as one comprehensive offering. PWHRP will offer a consistent program model that can be adopted by local governments for roll-out in their community and is designed to be aligned with new and proposed efforts at the State and Federal level.

PWHRP and WHPP are described below¹:

- PWHRP is statewide and will offer customers and contractors an easy entry point on the path to home performance. The prescriptive program will allow customers to reduce energy usage while increasing the energy performance and comfort of their existing homes and minimizing lost opportunities for future comprehensive retrofit options. The program will also educate contractors and customers on the benefits of implementing comprehensive whole house retrofits on existing buildings that will provide systematic reductions in energy use. PWHRP will:
 - Funnel participation from core Energy Efficiency (EE) and Demand Response (DR) portfolios, and through statewide coordinated marketed campaigns, education and outreach through local government partners;
 - Utilize no-cost Home Energy Efficiency Surveys (HEES) as an entry point to identify sources for efficiency improvements;

¹ Program names (customer facing) are subject to change, pending additional market research.

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- Offer targeted marketing to engage participants that receive stand-alone EE rebates for completing qualified home improvement measures;
 - Promote completion of retrofits based on preferred building science loading order (described below);
 - Offer attractive incentives to encourage progression along a preferred approach towards comprehensive retrofits;
 - Continuously engage customers over time as they progress toward a home performance approach;
 - Provide rigorous Quality Assurance and Quality Control, consistent with the Home Performance with ENERGY STAR® (HPwES) program, for elements completed within the prescriptive work scope;
 - Offer a holistic path towards home performance by aggregating key elements of a dwelling into its core elements: Building Envelope and Fixed Lighting; Heating, Cooling and Hot Water, and Appliances;
 - Coordinate with communities, local governments, and allied third-parties for outreach on local retrofit and contractor training opportunities available;
 - Coordinate with local financing opportunities, as appropriate;
 - Define the project baseline is the household energy usage; and
 - Be compatible with Home Energy Rating System (HERS) requirements.
- WHPP is a local utility program that will offer customers a more customized path to home performance than PWHRP. WHPP solutions will require participating contractors to obtain higher levels of certification and expertise. The performance program will require diagnostic “test-in” and “test-out” whole house assessments consistent with HERS guidelines and the national Home Performance with ENERGY STAR® (HPwES) program. The test-in assessments will generate a comprehensive work scope that must include each measure in the PWHRP package along with additional measures that are beyond the scope of PWHRP. The test-out assessments will be used to document that specified improvements have been properly sized and installed. Incentives associated with the performance programs will be correspondingly higher to reflect the verifiable levels of energy savings. WHPP will:
- Offer all of the above, and in addition:
 - Require higher levels of contractor training and qualifications;
 - May utilize an approved commercially available and approved building simulation software and methodology to model performance sites and estimate energy savings for the project;
 - Establish a project baseline by a “test-in” and “test-out” method compatible with the requirements of California Energy Commission (CEC) HERS assessments;
 - Typically be completed in a condensed timeframe; and
 - Provide greater incentives than PWHRP.

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This Program Implementation Plan (PIP) is for the statewide PWHRP. The PIP is intended to align with the goals established in the California Long Term Energy Efficiency Strategic Plan (Strategic Plan) and is a culmination of statewide efforts to design a PWHRP.

PWHRP offers a comprehensive approach to delivering prescriptive retrofit solutions to Californians by recognizing the essential interplay and relationships between groups necessary in the delivery of a successful program. PWHRP is designed to build customer and contractor² awareness of the house-as-a-system approach to residential retrofits and the many corresponding benefits of improving the energy savings potential and comfort of their dwelling. Customers will move along a prescriptive path influenced by the national HPwES program. A successful prescriptive program requires a program design that acknowledges customer barriers and drivers of participation, and delivers participants a flexible pathway towards comprehensive retrofits that is marked with outreach, awareness and effective marketing – each of which will be discussed in the sections below.

In order to rapidly scale PWHRP, special efforts will be undertaken to leverage opportunities brought about by interested local governments, communities and collaborators. In aggregate, the variety of attention and dollars focused on residential retrofits has created an unprecedented opportunity for market coordination, and the statewide prescriptive program has been designed to seek local partnerships and leverage applicable local government efforts.

The statewide PWHRP will follow an energy efficiency loading order³. Whole House programs encourage contractors and customers to approach the house as an integrated system rather than a combination of individual widgets or separate systems. The essence of the house-as-a-system approach is that an optimized building shell (thermal boundary) provides increased comfort and indoor air quality while enabling smaller and more affordable space conditioning equipment and reduced energy use associated with space heating and cooling. The thermal boundary consists of two layers or components – air barrier and insulation – which should both be continuous as well as contiguous (in contact with each other) for optimum performance. Because of the interaction between the thermal boundary and space conditioning loads, heating or cooling systems upgrades are ideally not to be performed until the building shell is

² A successful program recognizes the need to develop the pool of qualified home retrofit contractors to engage in – and have the opportunity to profit from – performing quality work. Through comprehensive training curricula (currently available in the marketplace) broken into the key elements of a home: Building Envelope and Lighting, and Heating, Cooling and Hot Water delivery (major systems); skilled tradespersons of varying areas of expertise will have the opportunity to enter the home retrofit market and grow their business by creating green jobs.

³ The loading order specifies improvements in the following sequence: (1) air sealing to obtain a tight building envelope; (2) insulation to complete the thermal boundary; (3) proper sizing, design, installation and commissioning of space heating and cooling systems; (4) proper sizing, design, installation, commissioning and insulation of the hot water system, including distribution; (5) efficient lighting and appliances, and demand response measures; and (6) renewables.

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optimized. Building shell and duct air sealing will be addressed in conjunction with combustion appliance safety and indoor air quality tests. Base load reduction measures involving major electrical appliances, lighting, plug loads, and demand response can be performed at any time without compromising the loading order.

Customer outreach and education efforts for the statewide PWHRP will coordinate with other IOU DSM program offerings (e.g., Home Energy Efficiency Rebate (HEER), Appliance Recycling Program (ARP), Comprehensive HVAC, SmartAC and other Residential Demand Response programs, Low Income Energy Efficiency, California Solar Initiative (CSI) and Summer Discount Plan (SDP)) to leverage multiple customer touch points. PWHRP and WHPP will provide an ideal platform to utilize the concept of continuous energy improvement for residential customers; tracking and encouraging a logical sequence of energy improvements made by customers over time, creating an ongoing, actionable dialogue with each customer regarding their energy use. The CSI initiative, in particular, offers a unique opportunity to leverage a coordinated statewide educational and marketing campaign with customers to “first reduce, then produce” in order to optimize all efficiency and renewable opportunities within their home.

PWHRP will serve as an entry point for interested service providers to increase California’s sustainable energy workforce in the home energy efficiency retrofit market. PWHRP will leverage all available opportunities to move customers to WHPP by informing them about available local or third-party financing options and other complimentary revitalization efforts that may be available within a particular jurisdiction. Incentives will be available for customers to offset a portion of the cost of specific comprehensive retrofits. Incentives may also be made available for contractors.

The IOUs expect the PWHRP program to achieve broad participation through several strategies. First, customers will be educated on the benefits of participating in whole house programs: improved indoor air quality and a reduction in electric, gas, and water usage. Coordinated marketing and education efforts from across the IOU portfolios, in conjunction with local government community-based outreach, will increase customer awareness and empower them to make informed choices about their energy use and DSM activities.

Second, as part of the effort to empower customers with information to support their choice to participate in PWHRP, prospective participants will be encouraged to participate in the IOU statewide HEES program to help inform and educate customers of the greatest opportunities within their homes and identify the most ideal program participants.⁴

⁴ The IDSM and HEES teams are currently working to expand the capabilities of HEES, recognizing that the current tools cannot currently support and complement PWHRP to this extent. The HEES program will be used as an entry point to provide complimentary information to customers and as a lead generator to increase participation in PWHRP. Per D. 09-09-047, the surveys are not intended to be full energy audits.

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Finally, PWHRP offers an opportunity for customers to implement a broad array of home efficiency improvements and empowers them to make the choice that best suits their particular situation while encouraging a progression towards comprehensive home performance retrofits.

b) List measures

The IOUs are working to develop the most appropriate level of incentives and measure offerings for PWHRP customers and contractors. The prescriptive program will seek to address the building shell as the first major component of the residential energy efficiency loading order described above. Subsequently, PWHRP will include measures that address air infiltration and insulation. Measures will be added to the PWHRP as the development of work papers indicates the potential to capture cost-effective energy savings throughout California's diverse climate zones. PWHRP will also include combustion safety testing to ensure that each home with a tightened building shell remains properly vented. Table 3 below provides a list of measures to be included in PWHRP and WHPP, and how they might be presented to customers and contractors in more seamless format.⁵

Table 3. PWHRP and WHPP Measures

Package	Eligible Measures
PWHRP	
Customer incentive up to \$1,000	Air Sealing
	Attic Insulation
	Duct Sealing
	Insulation of Domestic Hot Water
	Combustion Safety
	Optional:
	Permanent Lighting Fixtures and Controls
	Entry Points:
	HVAC QI/QM
WHPP*	Appliances
	PWHRP Package
	Wall Insulation
	Distribution System
	Heating Equipment
	Cooling Equipment
	Variable Speed Motor Air Handler
	Pool Pump and Motor
Base Load**	
	Appliances

* WHPP packages will be based on comprehensive work scopes that are generated by performance audits.

** Base load measures are not likely to be

⁵ The measure offerings and incentive amounts are preliminary and subject to change, pending engineering and program delivery analysis.

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	Room Air Conditioners	required in either package but can be replaced at any point in the loading order without sacrificing a great deal of efficiency.
	Shower Heads	
	Thermostatic Low Flow Restrictive Valve	
	Low Flow - Self Install EE Kit	
	Faucet Aerators Self Install EE Kit	

c) List non-incentive customer services

PWHRP participants will benefit from improved thermal comfort and indoor air quality.

The HEES program will be used by IOUs as an entry point to provide complimentary information to customers with the goal of increasing participation in PWHRP through lead generation.

PWHRP will require robust Quality Assurance and Quality Control measures to ensure that participating contractors are properly performing work.

PWHRP will also implement marketing and outreach campaigns to recruit contractors and educate home owners on the benefits of implementing comprehensive whole house retrofits (and the need to reduce energy use in existing buildings).

The statewide PWHRP will enforce robust Quality Assurance and Quality Control (QA/QC) measures to enhance customer satisfaction, contractor performance, local government participation, and a seamless transition into WHPP. PWHRP has modeled its design on the ideals exemplified in the national HPwES program. In order to provide an aligned, credible, and recognizable effort across California, program efforts will inform local governments and allied retrofit entities to aspire towards the same national standard of program design, deployment and QA/QC.

The QA/QC program will include the following elements:

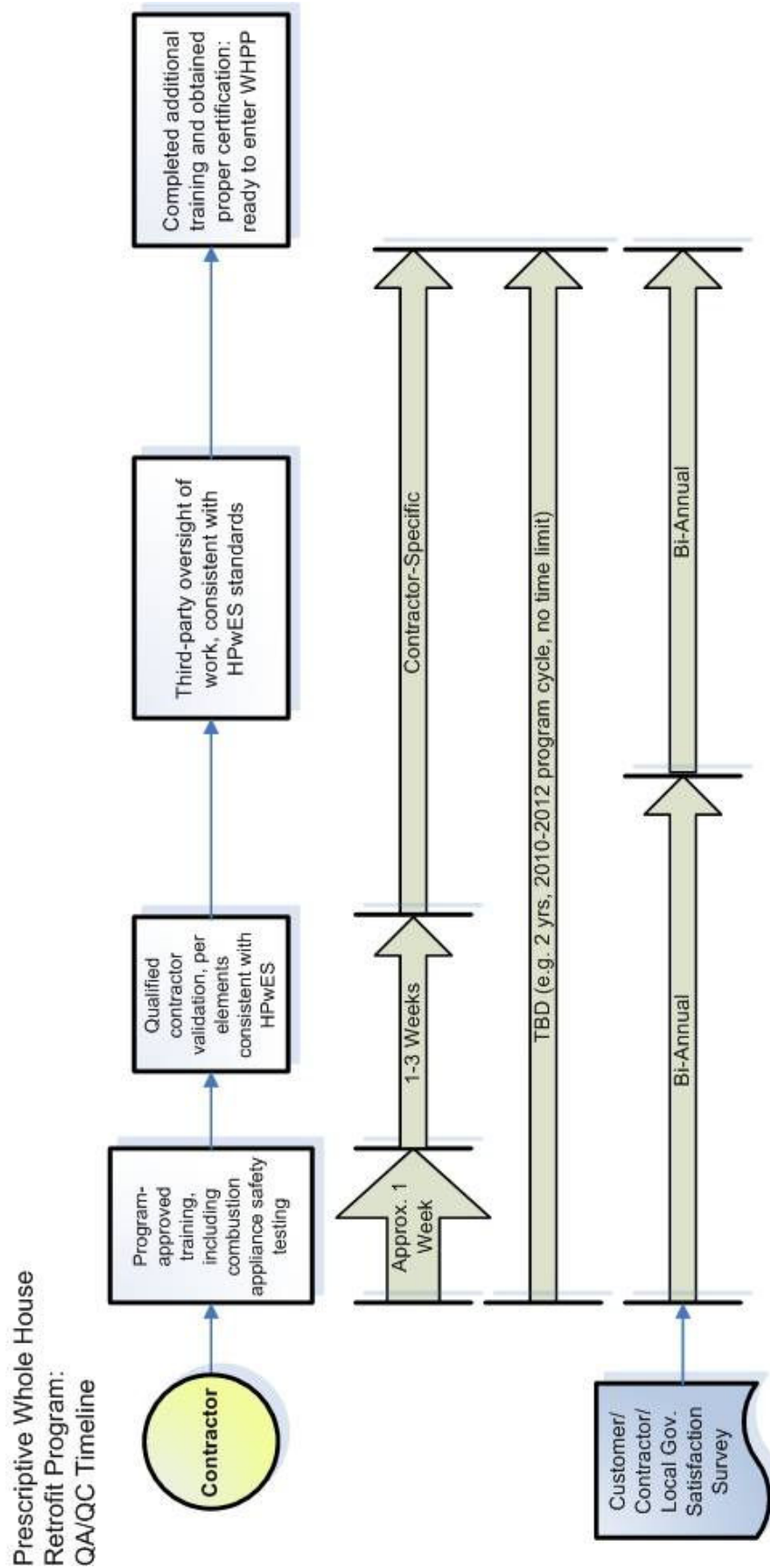
- Confirmation that interested contractors have proper bonding and certification;
- Contractor participation agreement;
- Customer, contractor and local government partner satisfaction surveys;
- IOU-provided toll-free lines for customers to report contractor compliance issues;
- Management of corrective actions through program implementers;
- Requiring building permits to be pulled on every job that receives incentives;
- Third party verification;
 - PWHRP Quality Assurance protocols will be consistent with the nationally recognized standards of the HPwES program.
 - Third party oversight will be more stringent for contractors as they enter the program.

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- Local governments who desire more extensive verification will specify requirements that are in addition to the IOU programs.

The QA/QC elements are shown below in timeline format:

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5. Program Rationale and Expected Outcome

The program is designed to provide an easy entry point for customers and contractors to implement home energy efficiency improvements that follow the loading order described above. IOUs recognize the need for a large-scale prescriptive program to elicit participation from customers from various entry points and in ways that meet their ability to participate. The program also serves as a conduit to expand the supply of contractors who are qualified to install the approved measures in the program while recognizing the importance of leveraging regional efforts in local retrofit programs, job creation campaigns, and financing opportunities.

a) Quantitative Baseline and Market Transformation Information

The Market Transformation (MT) metrics discussion has been fully developed, cited, and presented within Sections 5a and 5b of each utility's statewide and local Program Implementation Plans, as approved in D. 09-09-047. These metrics will not be repeated here. Please refer to the corresponding discussion for details.

In summary, considerable research supports the notion that MT metrics should neither be used for short-term analyses nor for specific program analyses; rather, they should focus on broad market segments. By its nature, MT occurs as a result of numerous factors, and cannot be directly attributed to all program efforts. MT metrics cannot be readily offered for this program at present.

b) Market Transformation Information

MT draws heavily upon diffusion of innovation theory, with the state of a market characterized by adoption rate plotted against time on the well-known S-shaped diffusion curve. In practice, however, the diffusion curve of products may span decades. Market share tracking studies conducted 3, 5 or even 10 years after the start of an MT program may reveal only small MT effects. Therefore, it is problematic, if not impractical, to offer internal annual milestones towards MT sectors and specific program activities.

By its nature, MT occurs as a result of numerous factors, and cannot be directly attributed to all program efforts. MT metrics cannot be readily offered for this program at present.

Table 4 – Market transformation metrics cannot be readily offered for this program

c) Program Design to Overcome Barriers

According to a report released recently by the Office of the Vice President, “homes in the United States generate more than 20 percent of our nation’s carbon dioxide emissions, making them a significant contributor to global climate change.”⁶ The challenge of addressing residential emissions has been a significant topic for California stakeholders and was addressed when D. 09-09-047 acknowledged,

⁶ Middle Class Task Force. Council on Environmental Quality. “*Recovery Through Retrofit*.” October, 2009. Page 1.

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“Improving the energy efficiency of all households is necessary to achieve the target outcome for the 2020 existing residential Strategic Plan goals”⁷. The Office of the Vice President report also identifies three market barriers to comprehensive residential retrofits:

- 1) Lack of customer and contractor awareness and access to information;
- 2) Lack of access to financing; and
- 3) Lack of access to skilled workers.

A shift in market perception, both for contractors and homeowners, towards a whole house approach must take place to drive customer action. PWHRP is designed to offer a one-stop approach to whole-house energy efficient improvements that recognize the need for customers to participate over varied timelines. To assist in the effort to overcome these problems and market barriers, PWHRP will:

- 1) Offer a statewide prescriptive whole house program to help build the home performance contracting industry and offer customers an easy entry point on the path to home performance (barrier 1);
- 2) Educate customers on the house-as-a-system concept and to encourage behavior changes that increase residential energy efficiency (barrier 1);
- 3) Educate contractors on the benefits of learning how to properly sell and install whole house measures as part of WE&T efforts (barrier 1& 3);
- 4) Offer incentives that influence customers and contractors to undertake comprehensive residential retrofits (barrier 1); and
- 5) Coordinate with relevant external funding and financing mechanisms at the county, state and federal levels (barrier 2).

d) Quantitative Program Targets

With the understanding that the target of 130,000 homes is a statewide market goal including customers served by Publicly Owned Utilities (POUs), the California IOUs look forward to playing a leading role in moving the market towards larger reductions in purchased energy for residential customers. The IOUs recognize that a 20% annual energy reduction in homes is an interim target necessary to keep the state on track to achieving 40% purchased energy reductions in all homes by 2020. As a result, the IOUs must offer whole house retrofit options that maximize cost-effective energy savings for customers throughout their combined service territory. IOUs and the CPUC’s Energy Division agree that 20% savings is an average across all homes treated by the IOU program. Work papers are currently being developed to determine the most cost effective measures to be included in the whole house program to meet a 20% energy reduction throughout California’s diverse climate zones.

Due to the uncertainty around actual PWHRP energy savings, and with the understanding that the 20% savings goal is a short-term target on the way to long-term, more aggressive statewide purchased energy reduction targets, the program will seek to understand the actual interactive energy savings associated with PWHRP. A

⁷ D. 09-09-047. Page 108.

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reduction of nearly 20% annual energy savings achieved through PWHRP will set the stage for homeowners to reach a 40% reduction in purchased energy by 2020.

Table 5⁸

	Program Target during 2010	Program Target during 2011	Program Target during 2012
Target 1: Enrolled and Completed Homes Retrofit Projects	Range TBD	Range TBD	Range TBD
Target 2: Completed Home Technical Training Classes	Range TBD	Range TBD	Range TBD
Target 3: Completed Business/Marketing Seminars	Range TBD	Range TBD	Range TBD

e) Advancing Strategic Plan goals and objectives

The PWHRP program design is consistent with the requirements of the Strategic Plan. It addresses the Whole-House Strategy of the Strategic Plan by influencing contractors and homeowners to implement comprehensive home retrofit energy efficiency measures.

The program will help to achieve the following goals identified in Section 2 of the Strategic Plan:

⁸ Program targets will be defined by additional research and engineering work paper approval.

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Table 6. Whole House Alignment with California Long Term Energy Efficiency Strategic Plan

Residential and Low Income Goal 2: Existing Homes			
Goal Number	Strategy	PWHRP Strategy	Integrated Programs & Activities
2-1	Deploy full-scale Whole-House programs. CPUC 2010-2012 Statewide Goal: Drive the market to retrofit at least 1% of California homes in the utility service areas to at least 20% annual savings.	Help drive the market to reduce the annual energy usage of 1% of residential customer homes by 20% by December 31, 2012.	<p>Programs: Statewide Whole House Prescriptive and local Comprehensive Home Performance, Solar, Demand Response</p> <p>Marketing: Customer segmentation and local coordination</p> <p>M&V: Studies to provide early feedback and establish baselines</p>
2-2	Promote effective decision-making to create widespread demand for energy efficiency measures.	Continue to offer HEES programs online and over-the-phone to provide customers with information to promote effective decision-making, in combination with other segment specific marketing outreach and educational activities.	<p>Programs: HEES, Statewide Whole House Prescriptive and local Comprehensive Home Performance,</p> <p>Marketing: Customer and contractor education to promote building efficiency and appropriate EE behaviors in a segmented manner</p>
2-3	Manage research into new/advanced cost-effective innovations to reduce energy use in existing homes.	Coordinate with Emerging Technologies and other programs to integrate market-ready technologies into the Whole House offering when appropriate.	Programs: Emerging Technologies, Demand Response, Solar, and others
2-4	Develop financial products and programs such as on-bill financing to encourage demand for energy efficiency building products, home systems, and appliances.	Coordinate with local financing districts to ensure that customers are aware of the most effective and attractive financing packages.	<p>Programs: Local Comprehensive Home Performance</p> <p>Coordination: Local government partnerships and other state/federal financing entities</p>

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2-5	Increase Title 24 compliance through specific measures leading to aggressive statewide enforcement.	Partner with local governments to expedite the permitting process to decrease the barriers to entry in the home performance industry.	Coordination: Local government partnerships
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6. Program Implementation

a. Statewide IOU Coordination

PWHRP is a statewide program that will be offered and administered by California's IOUs. Ongoing collaboration efforts will provide a venue to share experiences and best practices with the intent of improving PWHRP over time. The IOUs hosted a series of workshops throughout the state to gather stakeholder input during the program design process. Attendees included municipal-owned utilities, researchers, service providers, local government representatives, and other interested stakeholders⁹. As the program grows, the IOUs will continue statewide discussion and coordination to ensure collaboration and consistency by holding at least two stakeholder meetings per year.

i. Program name

Prescriptive Whole House Retrofit Program (PWHRP)

ii. Program delivery mechanism

PWHRP delivers more basic whole house measures intended to provide an easy entry point for customers to implement energy efficiency retrofits tailored to the needs of their home (through the local WHPP). The program includes marketing, education and outreach activities designed to engage and encourage customer and contractor participation. PWHRP will also serve as the pathway to drive participation in the local WHPP.

In addition to traditional marketing efforts, the IOUs will work through service providers and vendors to engage qualified tradespersons in the crafts that they have chosen. For example, there are many skilled HVAC-installers with North American Technician Excellence (NATE) or equivalent certifications that are presently not qualified to perform whole house retrofits, just as there are insulation experts who are not familiar with HVAC system performance. By being inclusive rather than exclusive, PWHRP will leverage the service provider industry to meet the demands of a growing home retrofit market by helping to expand contractor business models and fostering a successful comprehensive retrofit industry.

⁹ First public meeting: October 13, 2009 in San Ramon, CA. Second public meeting: October 27, 2009 in Ontario, CA. Third public meeting: November 12, 2009 in Downey, CA. Stakeholders also participated in twelve sub-group conference calls that were held in the weeks between public meetings.

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To build the supply of qualified contractors and contribute to creation of a sustainable workforce, PWHRP solicits, screens, and trains qualified residential repair, renovation, and HVAC contractors to deliver program services. The program also includes marketing activities to help educate customers on program services and provide additional customer leads to trained contractors. Participating contractors may receive an incentive for performing an established number of quality retrofits and reporting on all jobs, as assured through the program's rigorous post-retrofit quality assurance testing. PWHRP will align with consistent standards identified in association with the national HPwES program.

As discussed in later sections, PWHRP will work to leverage local government relationships with contractors and customers to further promote the whole house approach.

The program will employ a number of integrated delivery strategies:

- 1) Educate contractors and residential customers on the concept of home performance;
- 2) Coordinate with existing residential program offerings within the utility portfolios;
- 3) Provide robust quality assurance and quality control protocols that encourage quality installation and drive contractors to obtain additional training and certification;
- 4) Provide robust EM&V feedback loops to inform program enhancements;
- 5) Integrate with marketing efforts of the new statewide brand, when launched, and deliver complementary marketing messaging to drive customer demand and contractor participation;
- 6) Coordinate contractor training, marketing and outreach efforts with local governments, as appropriate; and
- 7) Develop an incentive structure that drives customers and contractors to undertake comprehensive residential retrofits.

iii. Incentive levels

In order to promote participation and encourage early adopters of the program, Whole House incentives will be tiered based on barriers to entry and desired actions. The intent is to drive early participation of customers and contractors by providing attractive incentives and a sense of urgency. The program will leverage core portfolio measures and reward additional incentives for performing program elements completed in their entirety, and properly.

The incentive structure will motivate several outcomes. First, the incentive structure will reward participants that follow the preferred loading order. This is accomplished by offering greater incentives to participants that progress from the PWHRP measures to WHPP measures.

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A second desired outcome of the incentive levels is the creation of a sense of urgency to motivate customer participation now, rather than to defer their participation into the future. To this end, the program will employ a tiered incentive model similar to the rebate structure used by the California Solar Initiative (CSI) program. To leverage external funding and financing mechanisms (e.g. American Reinvestment and Recovery Act (ARRA) stimulus funds, State Energy Program (SEP) funds, tax credits, AB 811 and municipal financing districts), the CA IOUs will periodically analyze rebate levels and will adjust them downwards based on external market drivers. These decision points will be marked by relevant changes in the home retrofit sector. For example, launch of the federal HOME STAR program, Retrofit through Recovery, and implementation of AB 758 legislation will drive regular IOU evaluation contractor and customer pull of IOU and external funding.

The average PWHRP customer incentive is expected to be in the \$1,000 range¹⁰ but could be larger depending on the size of the home and the baseline rebate. The customer will receive the entire rebate amount as a direct result of participating in PWHRP. IOU internal processing will combine applicable incentives from existing core programs with incentive dollars from the PWHRP budget but the overall process will appear seamless to the end-customer.

Additionally, PWHRP incentives will be:

- Lower than the WHPP incentives;
- Compatible with municipal financing options; and
- Implemented so as to leverage ARRA funding where appropriate.

The initial customer incentive amount will be based on further analysis of:

- Preliminary engineering estimates of energy savings based on climate zone and home characteristics;
- Preliminary Total Resource Cost estimates;
- Amount of incentives available for PWHRP measures in SPREE;
- Customer willingness-to-pay research; and
- Compatibility with external incentive dollars and financing.

Contractor incentives may also be included in PWHRP to help offset the initial capital expenditures associated with program participation. With the understanding that the ultimate goal of PWHRP is to drive participation in WHPP, any contractor incentives will be discontinued at an appropriate time during the 2010-2012 program cycle. Contractor incentives will also be provided in the form of:

- Building science background courses;
- Combustion appliance safety training;
- Program marketing collateral; and
- Quality assurance and quality control.

¹⁰ This value could change based on the pre-determined baseline and budget for each IOU

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In D.09-09-047, the Commission stated that "we clarify that that utilities should only claim savings to the Commission from measures receiving ratepayer funds, and should not claim savings from any non-resource program or project that does not receive ratepayer funded incentive dollars. Where there are projects or programs that receive both ratepayer and ARRA funding, the utilities (or the third party) should where possible track sources of costs and savings, and must ensure against double counting savings. We will review this as needed when the DOE releases final ARRA guidelines" (p.103-104). Accordingly, all savings from whole house measures receiving ratepayer funds will be counted toward the energy savings goals. And to the extent possible, track funds leveraged ARRA funding.

iv. Marketing, Education and Outreach plans

Summary of Stakeholder Input

PWHRP marketing efforts have been informed by input from the stakeholders who attended the public workshops and participated in conference calls. Among the takeaways, the program should:

- Address the entire customer experience;
- Support all market actors – not just consumers;
- Create a consistent message to avoid confusion;
- Leverage touch/action points;
- Target “communities” of high density opportunity;
- Consider the neighborhood approach or other target marketing to support; including allies and partners;
- Establish a process for referrals;
- Create a simple application process;
- Utilize trusted sources and influencers;
- Coordinate with local governments, contractors and municipalities;
- Evaluate point-of-sale displays; and
- Consider outreach to schools.
- Consider additional, near-term market research
- Collaborate with local government or municipal efforts, as appropriate

Objectives

- Foment greater awareness, understanding and appreciation for the house as a system concept;
- Drive response among qualified customers to seek out whole house projects; and
- Help fill the pipeline for contractors to develop and manage customer leads for specific projects.

Target Audiences

PWHRP marketing and outreach aims to include all stakeholders in the retrofit process, throughout the life of the program. This will help ensure all audiences receive consistent information and enable a more informed dialog about program specifics, in an effort to

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continuously engage stakeholders in the energy efficiency retrofit process. The target group is comprised of the following audiences:

- Single family residential homeowners in proposed targeted segments
 - Priority segments - and opportunity-sizing - to be determined through proposed primary research (below)
- Residential contractors and other third parties
 - Contractor interest and education will be driven by relationships with local chapters of various trade associations and targeted commercial contact databases.
 - This strategy helps empower the trained contractors to act as public educators and marketers
- Local governments, community-based organizations and other stakeholders
 - Efforts may target select public events and work with local earned media to publicize the program's benefits.

Keys to Success

Execution of a successful campaign that introduces customers and contractors to the benefits of comprehensive home energy efficiency retrofits will largely be dependent on funding available to support outreach to all audiences. With that in mind, following is the proposed approach and specific tactical recommendations that the IOUs aim to pursue, funding permitting:

- Utilizing a statewide naming convention and establishing consistent messaging and a creative envelope for WHPP marketing efforts to avoid market confusion;
- Co-branding where feasible;
- Considering the feasibility of a statewide website portal to act as a comprehensive communications tool for residential customers, contractors, community groups, cities and municipalities;
- Coordination with local governments engaged in residential retrofit programs;
- Engaging contractors and local governments in generating customer demand; and
- Providing collateral pieces to participating contractors to assist in lead generation and education.

The following chart breaks out proposed ideas, by type/responsibility, which may include:

Residential: Prescriptive Whole House Retrofit Program (PWHRP)

Prescriptive Whole House Retrofit Program: Alignment of activities, by type/responsibility

	Marketing	Education	Outreach
Statewide	<ul style="list-style-type: none"> • Development of consistent, shared messaging framework • Develop overarching strategy for—and implementation of—consistent marketing efforts and web-based activities. • Creation of core design elements for the program, which can be applied to SW and local marketing • Formulate comprehensive research plan, stimulus and fielding that represents all unique IOU attributes and needs • Establish core set of success metrics (individual goals to be established at IOU level) • Define and prioritize core set of marketing targets 	<ul style="list-style-type: none"> • Creation of contractor-facing materials, which may include collateral, sales-enablement materials, other • Coordination with national and regional retailers to secure point-of-purchase placements for program information • Consider holding webinars or other group forums for disseminating information to 3Ps and GPs • Development of web property that can serve as universal information access point for customers statewide 	<ul style="list-style-type: none"> • Develop engagement strategy for engaging Local Governments, LGPs and Community Outreach • Provide local governments with clear and consistent co-branding guidelines and opportunities • Outreach to solar contractors and potential solar customers • Hold conference calls with interested local governments to refine the scope of co-branded materials
IOU-specific	<ul style="list-style-type: none"> • Execution of Customer-facing marketing tactics • Placement in earned media channels • Sharing results on local marketing efforts • Implement efforts that demonstrate ongoing dialog with customers • Integration of WHP with existing/other DSM program marketing 	<ul style="list-style-type: none"> • Education materials for: contractors, industry organizations, homeowners, HOAs, neighborhood associations • Coordination with specific retailers to secure POS placement, marketing events, etc. • Statewide education curriculum can be implemented at the local level 	<ul style="list-style-type: none"> • Work closely with specific local governments to act as the point-of-contact for community-based social marketing campaigns. • Spread message to HOAs, Building Associations and Neighborhood programs • Coordination with mortgage lenders and energy-efficiency mortgage programs

Residential: Prescriptive Whole House Retrofit Program (PWHRP)

Timeline

Pending approval of PIP and funding, a proposed roll-out of the above proposed ME&O activities might look like the following:

	Q1	Q2/Q3	Q2/Q3	Q4
Phase	PIP Submission, Review and Approval; ME&O strategy development	Execution strategy and Creative Development	In-Market Deployment	Initial Results
Potential Activities	<p>Define and prioritize core set of marketing targets</p> <p>Establish core set of success metrics (individual goals to be established at IOU level)</p> <p>Develop engagement strategy for engaging Local Governments, LGPs and Community Outreach</p> <p>Formulate comprehensive research plan, stimulus and fielding that represents all unique IOU attributes and needs</p> <p>Development of consistent, shared messaging framework</p>	<p>Develop overarching strategy for—and implementation of—consistent marketing efforts and web-based activities.</p> <p>Hold conference calls with interested local governments to refine the scope of co-branded materials;</p> <p>Creation of core design elements for the program, which can be applied to SW and local marketing</p> <p>Development of Customer-facing marketing tactics</p> <p>Creation of contractor-facing materials, which may include collateral, sales-enablement materials, other</p> <p>Development of web property that can serve as universal information access point for customers statewide</p>	<p>Placement in earned media channels</p> <p>Integration of WHP with existing/other DSM program marketing</p> <p>Outreach to solar contractors and potential solar customers</p> <p>Spread message to HOAs, Building Associations and Neighborhood programs</p> <p>Work closely with specific local governments to act as the point-of-contact for community-based social marketing campaigns.</p> <p>Coordination with mortgage lenders and energy-efficiency mortgage programs</p> <p>Implement efforts that demonstrate ongoing dialog with customers</p> <p>Provide local governments with clear and consistent co-branding guidelines and opportunities</p>	Sharing results on local marketing efforts

Residential: Prescriptive Whole House Retrofit Program (PWHRP)

Research and Data Needs

To assist development and marketing of the retrofit options, the IOUs will look to recent research and data on similar programs, and explore conducting primary statewide research among both homeowners and contractors.

The objectives of a proposed survey among homeowners would seek to:

- Understand under what circumstances homeowners would participate in a whole house retrofit program (move-in, lifecycle stages, etc.)
- Determine how much they are willing to invest, and in what specific components of a whole house retrofit
- Identify what are the perceived benefits of a whole house retrofit vs. a piecemeal or single-item improvement
- Determine what program elements would be most important and motivating, and understand what types of marketing appeals or messages would have the greatest appeal
- Determine what characteristics are associated with greater interest in a whole house retrofit. Characteristics may include: geographic , demographic, socio-economic, housing , and others

Objectives among contractors include:

- Understand how contractors think about and approach whole house retrofit projects
- Determine contractor needs and issues regarding a utility whole house retrofit program
- Elicit contractor opinions regarding homeowner interest and implementation of whole house retrofit projects

Coordination with Local Government Partners and Program Providers

The current confluence of stimulus funding and municipal financing programs has provided a unique opportunity for IOUs to work with local governments to engage homeowners at the community level.¹¹ Coordination with contractor¹² and local government delivery channels will be critical as it is important that a consistent message is delivered to customers. Successful marketing implementation will raise customer

¹¹ In their book, Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing, Doug McKenzie-Mohr and William Smith provide evidence to suggest that “Community-based social marketing is an attractive compliment to regulatory and information intensive campaigns.”

¹² Key to creating successful customer pull will be careful monitoring of the home performance contracting network throughout each IOU’s service territory. The marketing strategies discussed herein will be deployed in geographical regions that can satisfy customer demand. As described previously, contractors will receive training for assistance with marketing techniques through utility training centers and state and federal workforce development programs. Contractors will be encouraged to utilize software platforms to maintain a customer lead database.

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awareness of the house-as-a-system concept and help to engage communities through local government outreach. Near term marketing tactics are shown in the tentative timeline below:

v. IOU program interactions

Coordination with statewide HVAC QI/QM initiatives:

PWHRP will coordinate with existing and planned statewide HVAC programs to encourage contractors to expand their businesses and deliver quality service that produces real savings. Current IOU HVAC programs utilize a network of contractors who have, in turn, developed relationships with customers. By including these contractors in PWHRP, IOUs can leverage contractors who have already received training on HVAC measures – a large piece of the house-as-a-system concept. These contractors are in a unique position to educate customers during routine appointments for system maintenance and installation.

Coordination with local Whole House Performance Programs:

Each IOU will implement a local WHPP in the 2010-2012 program cycle. PWHRP is intended to serve as an easy path for contractors and customers to learn about Whole House retrofits. The prescriptive program will raise awareness for both programs and eventually help to drive the market to performance-based work.

Coordination with local government programs:

The variety of stimulus dollars focused on residential retrofits has created an unprecedented opportunity for market coordination. Local governments and municipalities across the state will begin to deliver residential retrofit programs and municipal financing mechanisms for their communities. The statewide prescriptive program will be designed so that it is compatible with a variety of local government efforts.

The matrix below illustrates the possible on-going opportunities for engagement and interaction between the IOUs and local governments to support home performance. To simplify local government and IOU coordination throughout the state, IOUs will offer a limited number of packaged offerings that can be modified as appropriate. The packages will include program elements that are meant to enhance local government programs and avoid duplication. The specific program elements will include the following categories:

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Type of Govt	Marketing	Education	Training	Contractor Certific. /Education	Financing	EM&V	Data Collection
Highly Engaged LGs – Res. Retrofit & Municipal Financing							
Moderately Engaged LGs Res. Retrofit OR Municipal Financing							
Minimally Engaged LGs							

Highly engaged local governments are likely to be heavily involved in each area identified in the matrix and will likely launch residential retrofit programs along with municipal financing options. The program efforts will likely include some form of local policy creation and program design (including rebate and/or financing offerings) that will leverage local government channels for outreach to various communities. Many of the highly engaged local governments are likely to launch unique marketing and training efforts to leverage IOU programs. Efforts will also leverage IOU data collection and EM&V efforts. Generally, local governments will take the lead in utilizing IOU programs to complement other funding and accomplish strategic goals. Each IOU will designate a single point of contact who will serve as a liaison to other IOU staff members who engage regularly with local governments.

Moderately engaged local governments are likely to be heavily involved in fewer areas identified in the matrix. Program efforts will likely include residential retrofit programs or municipal financing options, but not both. Implementation may also encompass some form of local policy creation or local government program design but will likely focus a majority of resources on leveraging local government channels for outreach to various communities. Many of the moderately engaged local governments are likely to utilize a combination of unique marketing and training efforts in addition to IOU offerings. Efforts will also leverage IOU data collection and EM&V efforts. Generally, local governments will take the lead in utilizing IOU programs to complement other funding and accomplish strategic goals. Each IOU will designate a single point of contact who will serve as a liaison to other IOU staff members who engage regularly with local governments.

Minimally engaged local governments will likely leverage local government channels to promote existing IOU programs. Program efforts are not likely to include residential retrofit or municipal financing options and will rely primarily on the IOU data collection, marketing, training and EM&V efforts. The point of contact for these efforts will be designated by each IOU.

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Each local government is encouraged to leverage those IOU program elements that enhance local offerings. In addition to establishing points of contact for local governments and engaging throughout the program cycle, IOUs encourage local governments to leverage:

- IOU-coordinated conference calls and webinars to explain program elements;
- Co-branded and coordinated marketing, education and outreach materials (customer and contractor facing);
- Background training courses for contractors;
- A list of participating contractor qualifications and requirements;
- Program quality assurance and quality control protocols;
- Customer and potentially contractor incentives;
- Program EM&V;
- Assistance in tracking work that leverages ARRA and IOU dollars, to the extent feasible; and
- Outreach to local governments who receive ARRA dollars and have interest in launching residential retrofit programs.

The above scopes will be expanded overtime as a result of the recent AB 758 legislation directs the CEC to establish a regulatory proceeding to develop a comprehensive program (addressing both RES and NRES retrofits). Coordinated efforts between the CEC and IOUs will enable all entities to drive consistent market demand.

IOUs have already been in contact with:

Current Local Government Engagement	
Irvine	City
Berkeley	City
San Mateo	County
San Francisco	City and County
Palo Alto	City
Fresno	City
Fairfield	City
Los Angeles	County
Azusa	City
Visalia	City
San Luis Obispo	County
San Bernardino	City
West Hollywood	City
San Diego	City
San Diego	County
Orange	County
Santa Barbara	County
Chula Vista	City

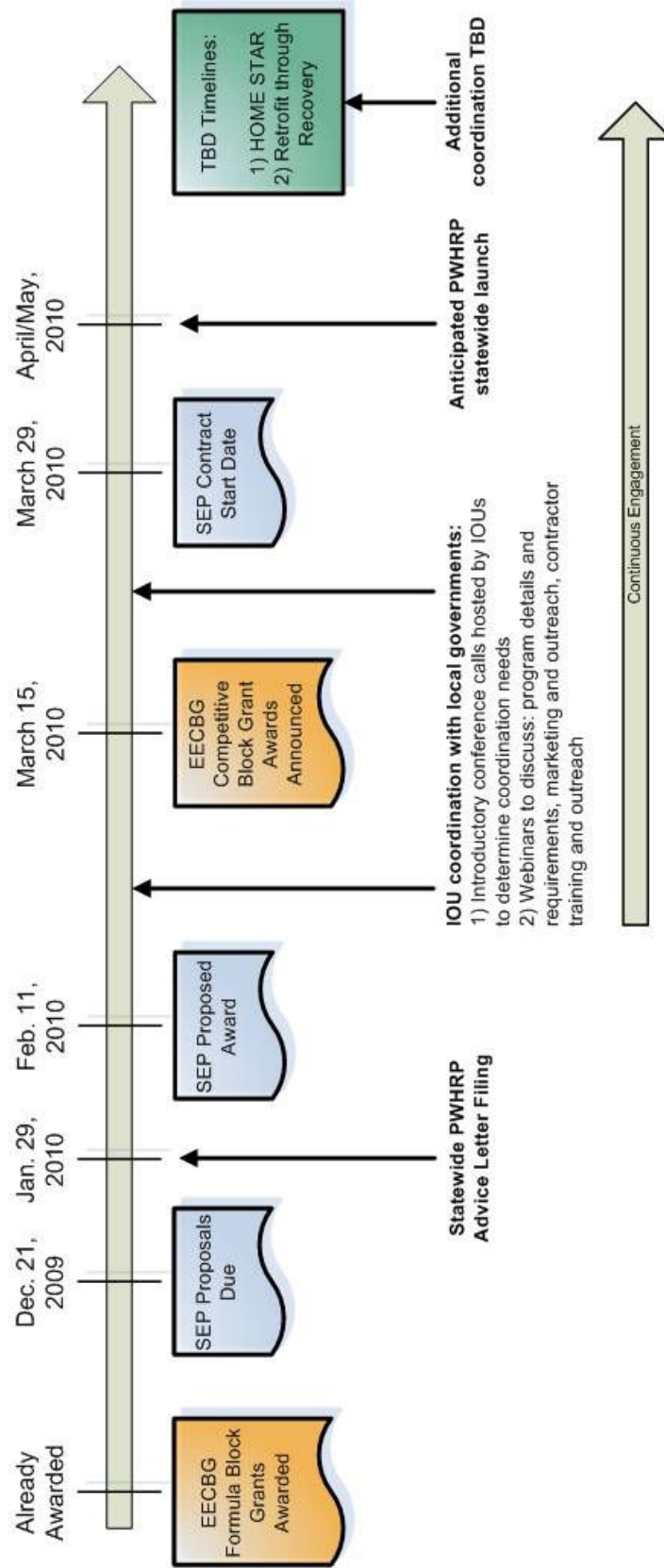
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San Joaquin Valley (SJV Unified APCD)	
Alameda	County
Contra Costa	County
Marin	County
Napa	County
Santa Clara	County
Solano	County
Sonoma	County
Association of Monterey Bay Area Governments	
Note: Primary contact through ABAG/Bki representatives	

In addition to efforts through local government partnership teams, the IOUs have been in touch with other local governments through third parties. A more detailed list will be provided in the final PIP, as relationships become more formalized. Near-term efforts are detailed on the diagram below:

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Prescriptive Whole House Retrofit Program:
Local Government & IOU Coordination Timeline
As of 12/21/2009



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vi. Similar IOU and POU programs

To avoid market confusion and make sure that no homes are left out, cooperation between IOUs and POUs will be critical. For example, SMUD has been very active in the statewide workshops, so the IOUs will work to leverage the efforts of SMUD and other POUs for consistency Statewide, beyond just the IOU programs.

Existing IOU VSP programs are similar to PWHRP efforts. The program will be driven by properly trained and certified contractors in the same way that programs like Duct Test and Seal are currently delivered. The PWHRP will leverage the VSP expertise in contractor recruitment and monitoring.

PWHRP was also influenced by SCE's 2006-2008 Comprehensive Home Performance IDEEA program which was conducted in collaboration with the City of Anaheim's municipal utilities "Home Performance with ENERGY STAR®" campaign. The statewide prescriptive program will compliment local home performance efforts and other portfolio programs offered within respective IOU portfolios. Utility program managers will continue to collaborate with other IOU and POU efforts, as appropriate throughout the program term.

b. Program delivery and coordination

PWHRP will be implemented in alignment with all applicable research, best practices, and policy movements. The program will coordinate, as applicable, with IOU marketing activities and may include website links, bill inserts, press releases, referrals, and information in marketing collateral.

The following activities are part of the program delivery to encourage greater numbers of service providers:

i. Emerging Technologies program

In the near term, the Emerging Technologies (ET) program will examine tools that can be used in the home by homeowners to enhance post-retrofit feedback. In addition, the ET program will investigate tools that can enhance program delivery for contractors, evaluators and raters. In the long-term, ET will be an important driver to making sure the PWHRP utilizes the most robust and cost-effective technologies.

This program is an ideal early-adopter vehicle for new technologies such as the hot/dry air conditioner, energy use monitors for users, new approaches to hydronic heating, ecological insulation options, cool roof technologies, and even advanced solar hot water and PV installations. PWHRP program managers will work with IOU emerging technology programs for inclusion of, or even field testing of, new technologies, as appropriate.

ii. Codes and Standards program

The 2008 Title 24 code revision is the most relevant to this program's work. PWHRP will be coordinated with the Codes & Standards program to ensure that

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the impacts of any code changes are incorporated into program design and implementation.

iii. Workforce Education and Training (WE&T) efforts

External workforce development in green jobs is a large focus of federal stimulus dollars flowing into the state through ARRA. IOU efforts will coordinate with the CEC, community colleges, HERS providers, local governments and other entities to ensure that proper training is provided.

Specific workforce development efforts supporting prescriptive and performance programs include the following:

- CEC/EDD: California Clean Energy Workforce Training Program
- Other community college programs
- Third party programs
- IOU training offerings (if required as backup)

PWHRP will be coordinated with the statewide IOU Workforce Education and Training (WE&T) program, local government residential retrofit and contractor training programs that are tied directly to workforce education and training efforts on a state and federal level. PWHRP will drive customer demand that will broaden a market for contractors to expand new or existing businesses by hiring individuals who receive training through the workforce expansion efforts.

In addition, IOU (WE&T) programs will continue to offer building-block courses that educate students on the concepts that form the foundation of home retrofit programs. Those concepts include:

- The house-as-a-system;
- Combustion safety training;
- Green building techniques;
- Blower Door Based Air Sealing;
- Codes and standards (Title-24);
- Basic lighting and HVAC technologies; and
- Business training (including the enhancement of sales, marketing, training, and accounting skills).

Contractor training requirements will be based on the measures included in the PWHRP package. The PWHRP package will be defined as the development of work papers (currently underway) indicates the potential to capture cost-effective energy savings throughout California's diverse climate zones. As this additional analysis makes the list of measures clearer, specific contractor requirements will be more concretely defined. PWHRP will provide contractors with an easy on-ramp to WHPP without sacrificing any considerations for applicable safety requirements.

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Contractor recruitment efforts will be coordinated with the entities mentioned above in addition to direct outreach through trade groups with locally active memberships (e.g. Institute of Heating and Air Conditioning Contractors, Air Conditioning Contractors of America, Sheet Metal and Air Conditioning Contractor's National Association, National Association of the Remodeling Industry, Electric and Gas Industries Association, Build It Green).

iv. Program-specific marketing and outreach efforts

Details on proposed ME&O activities are provided above (section 6a, iv)

v. Non-energy activities of program

A truly comprehensive home retrofit includes some elements that are chosen by the homeowner primarily for reasons other than energy bill savings, such as indoor air quality, noise abatement, or structural deterioration problems. When building envelope enhancements are made, the homeowner typically also receives health benefits, home integrity assurance from moisture problems, HVAC equipment longevity, and a potential home value increase. At the program level, implementers review projects to identify and encourage all project components that contribute to energy savings as well as other benefits. At an individual project level, contractors seek to identify homeowner's desires, solve a full range of home performance deficiencies, and clearly explain how these deficiencies contribute to energy waste.

vi. Non-IOU programs

See Sections 4a. v. and vi. above

vii. CEC work on PIER

PIER funded the development of Home Performance contracting protocols during 2003-2006. That program provided field testing and contractor feedback for the PIER project. In addition, PIER may fund further research into related topics including homeowner motivation, valuation of societal benefits, and comparative demonstration and analysis of methods for energy savings forecasting and verifications.

viii. CEC work on Codes and Standards

The 2008 Title 24 code revision is the most relevant to this program's work. PWHRP will be coordinated with the Codes & Standards program to ensure that the impacts of any code changes are incorporated into program design and implementation.

ix. Non-utility market initiatives

In order to rapidly scale-up the PWHRP program, special efforts will be undertaken to leverage opportunities brought about by interested local governments, communities and collaborators that have received Federal Stimulus dollars through the ARRA or CA SEP grants, jurisdictions that offer AB 811

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finance districts¹³, EEC Block Grants, local DOE efforts, Federal Tax Credits, or other opportunities available. It is anticipated that stimulus-funded efforts will begin operations in the early part of 2010 with the goal of exhausting funds by the end of 2012. In addition to these external financial levers, other residential retrofit efforts and legislation is underway both at the federal level (e.g. H.R. 2454 ‘Waxman-Markey Bill’), state level (e.g. AB 758, AB 1109, S. 1733 ‘Kerry-Boxer Bill’) and at the local level. Some of the larger legislative efforts, however, may not take affect until the next program cycle.

In aggregate, the variety of attention and dollars focused on residential retrofits has created an unprecedented opportunity for market coordination, and the statewide prescriptive program will be designed so that it is compatible with these local government and statewide efforts.

c. Best Practices

The statewide efforts leading to this implementation plan have been informed by a series of public meetings in geographically diverse locations throughout California. A variety of stakeholders, many with direct experience in home performance, have contributed lessons learned and best practices from their work in the industry and existing whole house programs throughout the nation.

In addition, the statewide efforts have built on the work of the California Home Energy Retrofit Coordinating Committee (CAHERCC). That committee convened a number of local governments, external financing experts, home performance contractors, and program implementers to drive consensus to recommendations for these programs. PWHRP owes a great deal to the efforts of the CAHERCC. Additional primary research was conducted to gather best practices from the NYSERDA Energy Smart (HPwES) program.

SCE’s experiences from the 2006-2008 IDEEA pilot program will also be incorporated in the 2010-2012 campaign. Lessons learned include: reinforcing the accountability of contractors for the collection of completed reports upon completion of a job, and attracting more customers to participate in comprehensive home retrofits. These lessons, plus other tactics that will better enable contractors to grow their business, will be employed during 2010-2012.

d. Innovation

The innovation in this program design will take the form of coordination with external efforts and ease of participation for customers and contractors. PWHRP will coordinate IOU incentives and marketing outreach with local government efforts in neighborhood outreach and contractor recruitment. This unprecedented effort allows for multiple levels of engagement that, through coordination with local entities, will reach to a neighborhood level that will drive awareness and market adoption.

¹³ External financing districts created by AB 811 legislation are beginning to lay the foundation for a market that will make home performance retrofits affordable and attractive to homeowners, cities, and counties.

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e. Integrated/coordinated Demand Side Management

The IOUs have identified IDSM as an important priority. As a result, they have proposed the establishment of a Statewide Integration Task Force (Task Force). The IOUs plan to monitor the progress of other IDSM efforts and to work closely with the Task Force to identify comprehensive integration approaches that feed into the overall statewide strategy and to implement best practices as rapidly as practical.

The statewide PWHRP is a platform for integration of solutions to the residential customer and is intended to provide an easy entry point to Whole House Performance for homeowners and contractors that ultimately integrate other programs for whole house and customer solutions. As awareness of the cost-effective opportunities in whole house retrofits grows through training and education efforts, customers will be presented with the ability to integrate Demand Response and properly-sized onsite generation. With the inherent synergy that exists between the energy efficiency awareness efforts of CSI and the Whole House programs, PWHRP information will be made available to IOU teams in call-centers with the intent of providing a PWHRP introduction to customers or contractors interested in CSI. Coordination with stakeholders who maintain approved solar contractor lists may also provide an opportunity to deliver the whole house message to parties interested in installing solar systems. In addition, any contractors onsite with customers can be delivery channels for Demand Response programs associated with AC replacements or installation of DR technology on existing HVAC units.

PWHRP will also serve as a platform to integrate technology advancements in Demand Response and Advanced Metering. Statewide leads for IDSM and WE&T coordination have been active in the statewide PWHRP design process to enable integration of DSM programs through training efforts, marketing efforts and multiple delivery channels. IDSM efforts will be part of an ongoing conversation with customers to enhance programs and increase participation throughout the state.

Ultimately, as traction to integrate programs and efforts is gained through the PWHRP, the SW IDSM Task Force will identify opportunities and best practices and work to leverage these and bring them into common practice by contractors and other delivery channels.

f. Integration across resource types (energy, water, air quality, etc)

The PWHRP is designed to deliver comprehensive solutions to homeowners while integrating across resource types to maximize customer benefits not only in terms of energy savings, but through improvements to occupant health, safety and comfort. Primarily, there are opportunities for water efficiency and indoor air quality improvements.

One of the major benefits of comprehensive home retrofits is improved indoor air quality. Residents will notice more consistent temperatures throughout their home and in many cases, improved indoor air quality.

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The embodied energy in water distribution will become an increasingly important part of utility programs. The consumer education process in the house-as-a-system approach will provide an opportunity for local governments to present homeowners with information on non-energy savings inherent in comprehensive retrofits. Integrated offerings with local water agencies have already demonstrated successful synergies. For example, PG&E's Cooperative High Efficiency Clothes Washer Rebate Program has yielded some very impressive energy and water efficiency results that include a rise in utility and water agency program participation¹⁴. Continued results of such efforts will be shared among the IOUs throughout the program cycle and may influence future program modifications.

g. Pilots

Not Applicable.

h. EM&V

The utilities are proposing to work with the Energy Division to develop and submit a comprehensive EM&V Plan for 2010-2012 after the program implementation plans are filed. This will include process evaluations and other program-specific studies within the context of broader utility and Energy Division studies. More detailed plans for process evaluation and other program-specific evaluation efforts cannot be developed until after the final program design is approved by the CPUC and in many cases after program implementation has begun, since plans need to be based on identified program design and implementation issues.

Conceptually, the tiered Whole House Program with both the prescriptive and performance elements should be subject to the following three-part M&E study design. The timing of when these studies will depend on ED approval and program implementation milestones.

Part-1: Early market assessment & evaluability study

Early market assessment and evaluability study is designed to assess the detailed program implementation plan or third party contract to make sure the program design is consistent with program theory, and adequately provisioned for all key implementation processes. Included in the assessment is an in-depth review of the tracking system for various processes to make sure they can support later evaluation activities.

¹⁴ Results include: 17 participating water agencies/utilities experienced a 30% increase in customer involvement through this collaborative effort; PG&E has experienced a 63% increase in overall clothes washer rebates in 2008; prior to the water community joining the effort, 10% of the models rebated were in the most energy efficient tier, now through our relationship with them, over 90% are in the most energy efficient tier; and 7000 gallons of water saved annually.

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- Market Assessment to confirm program objectives and proposed implementation under current conditions
- Review of program theory, logic and process design,
- Assessment of contractor qualification process and tracking,
- Assessment of project quality control process and tracking,
- Assessment of project verification process and tracking,
- Assessment of customer interface and support process (i.e., customer service tracking),
- Assessment of marketing interface and tracking.

This is a time-sensitive study and will need to stay in lock-step with the program implementation. Part-2 of the study will require IOUs to select a study team with process evaluation expertise. Part-1 and Part-2 of the evaluation can work in parallel.

Part-2: Rapid feedback process evaluation study

This is essentially an early process evaluation for the program once it has been operational for a minimum of six to nine months. The goal is to see if program feed-back from Part-1 and Part-2 are implemented. In addition, rapid feedback process evaluation will provide program operational recommendations. The results will also be used to fine-tune program design for 2013-2015 program cycle.

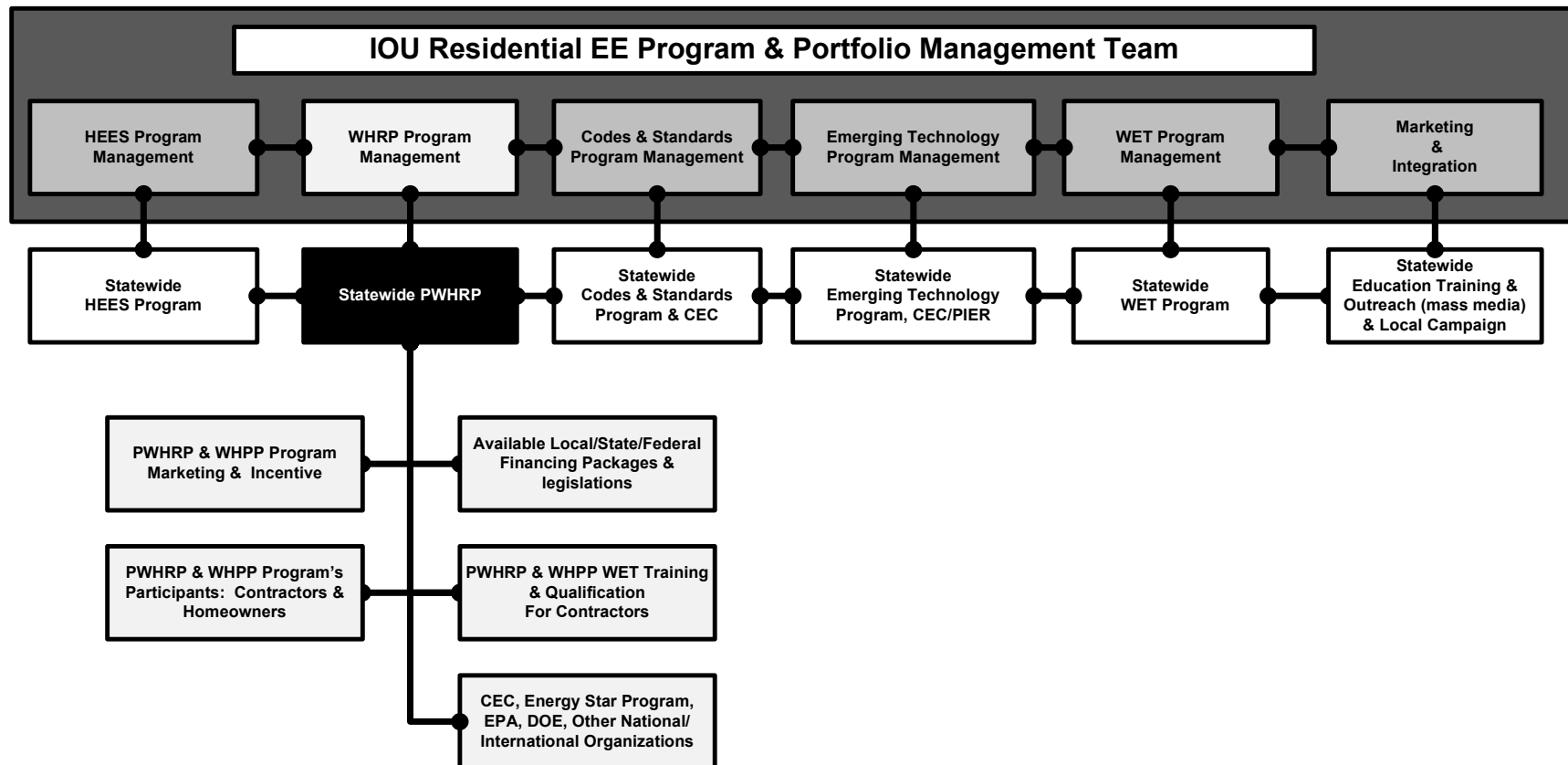
Part-3: 2010-2012 process evaluation study towards the end of program cycle.

This is a standard process evaluation for the program. This evaluation should aim to take place before the end of the program the cycle in 2012 so additional feedback can aid program implementation consideration for 2013. In addition to a review of key program processes, the focus of this evaluation will be on program results and key activities, program AKA accomplishments, and customer satisfaction.

EM&V plans will be developed in conjunction with Energy Division staff per the forthcoming final EM&V decision. EM&V budgets, process and roles will be delineated in these plans as the pilot requires and the final decision allows.

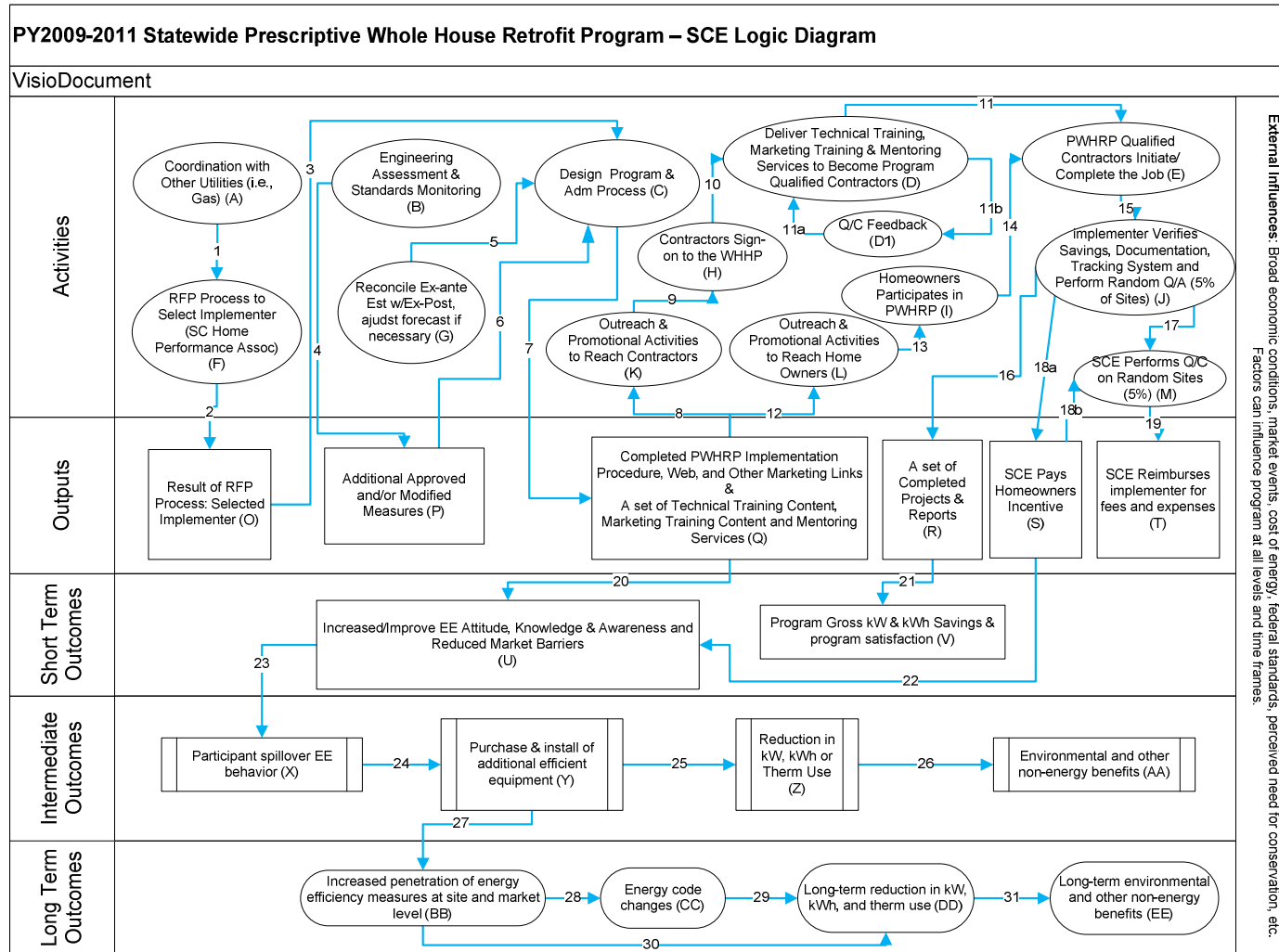
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7. Diagram of Program Interaction



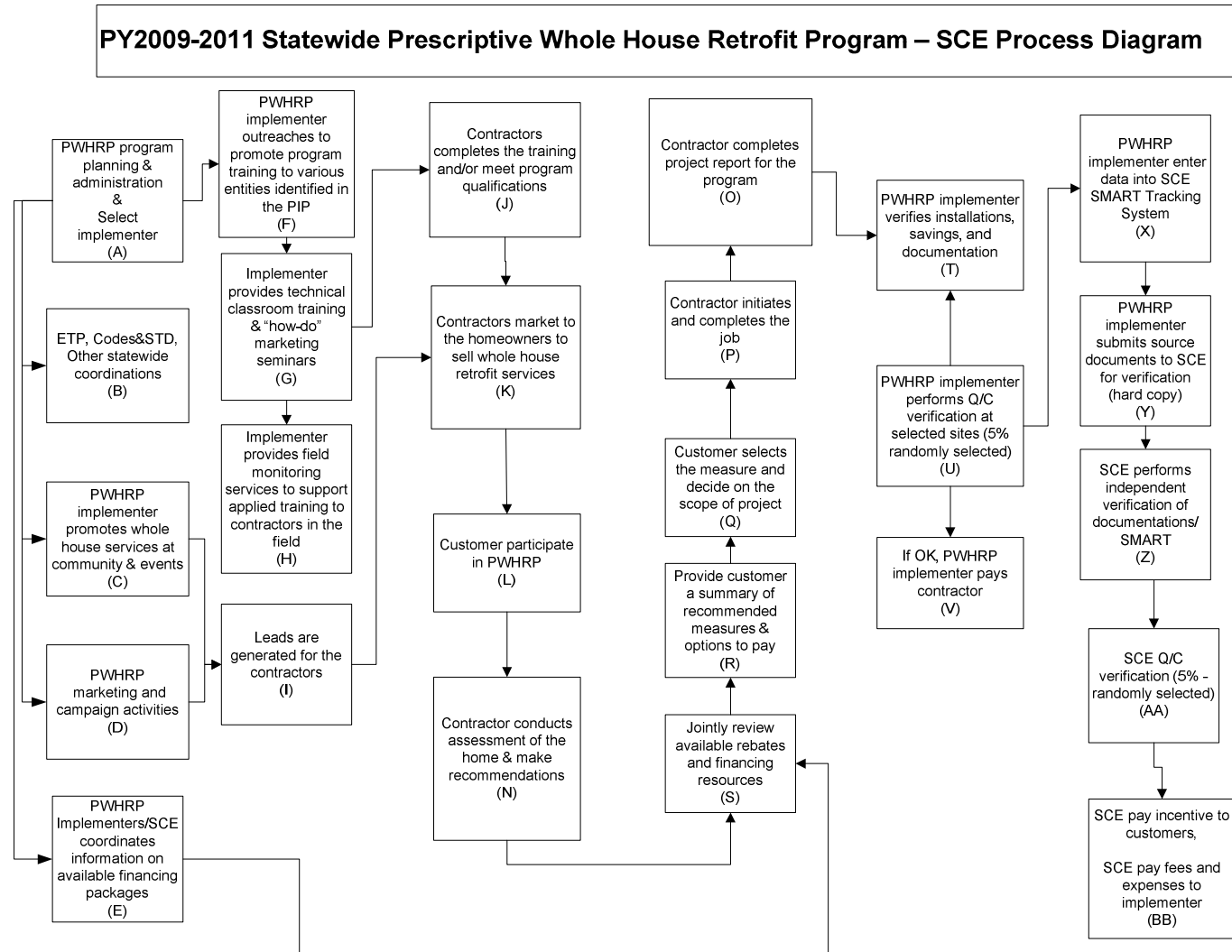
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8. Logic Model:



Residential: Prescriptive Whole House Retrofit Program (PWHRP)

Appendix A: Program Process Diagram



Residential: Prescriptive Whole House Retrofit Program (PWHRP)

Appendix B: Approximate Annual Energy Usage and Category Leads

Approximate annual energy usage for IOUs. Please note that the numbers below were taken from the latest DEER database and are subject to change in the final draft of this PIP.

Table B.1 - Approximate Annual Energy Usage by IOU Service Area¹⁵

Climate zones weighted	Base: Annual electricity use (kWh)	Base: Annual end-use (kW)	Base: Annual end-use: gas
PG&E	6479.2	3.1876	556.047
SCE	6874.7	3.317	
SDG&E	6788.78	2.798	409.591
SCG			457.575
Average CA	6737.03	3.13694	475.6975

Table B.2 - Whole House Sub-Category Leads				
Category	Sempra	SCE	PG&E	Statewide Lead
Marketing, outreach and communications	Regina Marston and Michelle Cook	Stephanie Yamasaki, Cheryl Wynn	John Kaufman	John Kaufman
Local Government and IOU Coordination	Frank Spasaro	Marjorie Hamilton, Joy Adams	Paul Carp	Paul Carp
Financing	Frank Spasaro	Gary Livingston, John Fasana	Jeff Gleeson	Jeff Gleeson
WE&T	Rodney Davis	Carlos Hernandez, Cedric Benton	Charles Segerstrom	Charles Segerstrom

¹⁵ The values in Table B.1 are approximate and subject to further evaluation.